

## ABSTRACT

The present invention relates to a humidifier for humidifying reactant gases for a polymer electrolyte fuel cell system, and more particularly, to the humidifier for humidifying reactant gas which adjusts an amount of water for humidification while reducing electric power consumption and size, thereby maintaining an optimal temperature and humidity of the reactant gas supplied to a polymer electrolyte fuel cell. comprises a humidification vessel connected to a reactant gas inlet pipe for supplying reactant gases thereto, a water inlet pipe for supplying water thereto, and a reactant gas supplying pipe for supplying the humidified reactant gas to the fuel cell are connected, respectively, and a sprayer which is installed in the humidification vessel and finely sprays the reactant gases and water which are supplied to the humidification vessel.